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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,729	12/14/2001	Xiaoru Wang	83067SMR	5473

7590

09/23/2004

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EXAMINER
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SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/017,729

Applicant(s)

WANG ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-14 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-14 and 17-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION**

1. All outstanding rejections are overcome by applicants' amendment filed 6/21/04.

The following action is non-final in light of the new grounds of rejection as set forth below which includes the use of a new reference against the present claims, namely, Mathauer et al. (U.S. 6,727,318), which was published after the mailing of the previous office action.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11-12 and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Each of claims 11-12 and 24-25 recites the "molecular weight" of the polymer phase. The scope of each of the claims is confusing because it is not clear what type of molecular weight this refers to – weight average, number average, etc.

**Claim Rejections - 35 USC § 102**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4-6, 9-10, 13-14, 17-23, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Mathauer et al. (U.S. 6,727,318).

Mathauer et al. disclose ink jet ink comprising water, humectant, hexadecane, and composite polymer dye particles which comprise polymer and water-insoluble dye wherein the dye is present during the polymerization of the polymer and is present in amount of at least 5%. The water-insoluble dye includes azo, phthalocyanine, oxazine, methane, and metal complex dyes. The polymer is obtained from monomers including crosslinking monomers, styrene, and (meth)acrylate. It is further disclosed that the composite polymer dye particles possess particle size of less than 1000 nm and average particle size of 100-400 nm. There is also disclosed process for making the composite polymer dye particles which comprises preparing dye solution comprising dye and monomer, adding water and hexadecane, adding initiator including peroxide initiators or azo initiators, and then polymerizing. There is further disclosed ink jet printing method comprising providing ink jet printer, loading printer with ink jet recording sheet comprising support having image receiving layer, and then printing the ink onto the sheet (col.1, lines 5-10, col.2, lines 48-56, col.3, lines 18-19, 25-26, and 27-40, col.4, lines 57-62, col.5, lines 25-31, 61, and 65-67, col.6, lines 28-34, col.7, lines 23-25, col.8, lines 56-65, col.21, lines 53-55, col.23, lines 29-42 and 51-54, col.25, lines 22-26, col.25, lines 45-67, col.27, lines 6-11, col.28, lines 47-52, col.28, lines 65-67, col.33, lines 9-38, col.34, lines 26-54, col.53, line 56-col.55, line 7, col.55, line 33, and col.70, lines 32-34).

In light of the above, it is clear that Mathauer et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathauer et al. (U.S. 6,727,318) in view of Moore et al. (U.S. 4,698,651).

The disclosure with respect to Mathauer et al. in paragraph 5 above is incorporated here by reference.

The difference between Mathauer et al. and the present claimed invention is the requirement in the claims of specific type of dye.

Moore et al. disclose the use of arylazoisothiazole dye in order to improve light stability and hue (col.1, line 65-col.2, line 15).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the ink of Mathauer et al. in order to improve light stability and hue, and thereby arrive at the claimed invention.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathauer et al. (U.S. 6,727,318) in view of Evans et al. (U.S. 6,001,161).

The disclosure with respect to Mathauer et al. in paragraph 5 above is incorporated here by reference.

The difference between Mathauer et al. and the present claimed invention is the requirement in the claims of specific type of dye.

Evans et al., which is drawn to ink jet ink, disclose the use of dye which is metal complex of 8-heterocyclcylazo-5-hydroxyquinoline in order to produce ink with outstanding light stability and bright magenta hue (col.2, lines 17-24).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the ink of Mathauer et al. in order to produce ink with outstanding light stability and bright magenta hue, and thereby arrive at the claimed invention.

9. Claims 11-12 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathauer et al. (U.S. 6,727,318) in view of Ishizuka et al. (U.S. 2001/0023267).

The disclosure with respect to Mathauer et al. in paragraph 5 above is incorporated here by reference.

The difference between Mathauer et al. and the present claimed invention is the requirement in the claims of molecular weight of the polymer in the composite polymer dye particle.

Ishizuka et al., which is drawn to ink comprising colored resin, i.e. composite polymer dye particles, disclose the use of polymer which has molecular weight of 1,000-100,000. It is disclosed that if the molecular weight is less than 1,000, it is difficult to obtain stable dispersed product while if the molecular weight is greater than 100,000, solubility into the organic solvent present in the ink deteriorates, viscosity increases, and dispersion is difficult (paragraph 244).

In light of the motivation for using polymer with specific molecular weight in the composite polymer dye particles disclosed by Ishizuka et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use polymer with such molecular weight in the composite polymer dye particles of Mathauer et al. in order to produce ink with stable dispersion of composite polymer dye particles, and thereby arrive at the claimed invention.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
9/13/04